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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,548	08/30/2001	Xingxi Zhou	0425-0851P	7901

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EXAMINER

FELTON, AILEEN BAKER

ART UNIT PAPER NUMBER

1755

DATE MAILED: 06/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/914,548

Applicant(s)

ZHOU ET AL.

Examiner

Aileen B. Felton

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 23,24,29,30,34,39,40,50-52,65,67-69,73 and 75 is/are pending in the application.

4a) Of the above claim(s) 50-52,65 and 69 is/are withdrawn from consideration.

- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23,24,29,30,39,40,67-69,73 and 75 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 23, 24, 29, 30, 34, 39, 40, 73, and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnes et al(5,608,183) in view of Timmerman (3,902,934).

Barnes et al discloses a gas generating composition that comprises 58.9 % of basic copper nitrate, 41.1 % of guanidine nitrate, and 5.3 % guar gum as a binder. The composition is extruded into long strands with a single perforation and then chopped. See Example 2. The weight loss ratio, concentration of trace gases or maximum internal pressure are inherent properties of this composition. As to limitations which are considered to be inherent in a reference, note the case law of In re Ludke, 169 USPQ 563; In re Swinehart, 169 USPQ 226, In re Fitzgerald, 205 USPQ 594; In re Best et al, 195 USPQ 430; and In re Brown, 173 USPQ 685, 688. The oxidizer size is not disclosed.

Timmerman teaches that it is known to decrease particle size of oxidizer to lower than 25 micron in order to allow for complete reaction of the oxidizer (col. 2, lines 35-50).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the size of the oxidizer since Timmerman suggests that

sizes lower than 25 micron will allow for complete reaction of the oxidizer and to prevent unreacted particles from being ejected with the gaseous reaction products. It is well-settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

3. Claims 23, 24, 29, 30, 34, 39, 40, 73, and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendenhall (5,841,065) in view of Timmerman (3,902,934).

Mendenhall discloses a gas generating composition that comprises 40.3 % of basic copper nitrate, 15.7 % of guanidine nitrate, and 5.7 % guar gum as a binder. See Example. The weight loss ratio, concentration of trace gases or maximum internal pressure are inherent properties of this composition. As to limitations which are considered to be inherent in a reference, note the case law of In re Ludke, 169 USPQ 563; In re Swinehart, 169 USPQ 226, In re Fitzgerald, 205 USPQ 594; In re Best et al, 195 USPQ 430; and In re Brown, 173 USPQ 685, 688.

Timmerman teaches that it is known to decrease particle size of oxidizer to lower than 25 micron in order to allow for complete reaction of the oxidizer (col. 2, lines 35-50).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the size of the oxidizer since Timmerman suggests that sizes lower than 25 micron will allow for complete reaction of the oxidizer and to prevent unreacted particles from being ejected with the gaseous reaction products. It is well-settled that optimizing a result effective variable is well within the expected ability of a

person of ordinary skill in the subject art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

4. Claims 67, 68, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnes et al(5,608,183) in view of Timmerman (3,902,934) as applied to claims above 23, 24, 29, 30, 34, 39, 40, 73, and 75, and further in view of Matsuda et al(5,780,767) or Zhou (6,468,369) or Seeger (5,834,679).

Matsuda, Zhou, and Seeger teach the use of a sodium salt of carboxymethylcellulose for use as a binder with explosive compositions.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute sodium carboxymethylcellulose for the guar gum disclosed by Barnes et al since they are both known water soluble binders and would have the same result on the gas generating composition and since Matsuda, Zhou, and Seeger all teach that sodium carboxymethylcellulose is a known binder for gas generating compositions.

5. Claims 67, 68, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendenhall(5,841,065) in view of Timmerman (3,902,934) as applied to claims above 23, 24, 29, 30, 34, 39, 40, 73, and 75, and further in view of Matsuda et al(5,780,767) or Zhou (6,468,369) or Seeger (5,834,679)..

Matsuda, Zhou, and Seeger teach the use of a sodium salt of carboxymethylcellulose for use as a binder with explosive compositions.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute sodium carboxymethylcellulose for the guar gum

disclosed by Mendenhall since they are both known water soluble binders and would have the same result on the gas generating composition and since Matsuda, Zhou, and Seeger all teach that sodium carboxymethylcellulose is a known binder for gas generating compositions.

### ***Response to Arguments***

6. Applicant's arguments regarding inherency in a section 35 USC 103 rejection are not persuasive. See *In re Napier* which states: "The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness." *In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references).

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aileen Felton whose telephone number is 571.272.6875. The examiner can normally be reached on Monday-Friday 6:30-4:00, except alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571.272.1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**AILEEN FELTON**  
**PRIMARY EXAMINER**